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ABSTRACT

The role influx of underprepared students has challenged community colleges to develop effective ways to improve teaching and learning strategies in the classroom. In 1990, a study was conducted by the Mississippi State University Educational Media Center to compare the effects of traditional versus Computer Assisted Instruction (CAI) on the academic achievement of students in a junior college psychology course. The study sample consisted of 145 students of equivalent aptitude and ability as assessed by American College Testing scores. Of these students, 70 were taught in a traditional lecture format, while 75 students received CAI in the classroom. The achievement of the two groups, as measured by grade point average (GPA), was compared through the use of an analysis of covariance model. In addition to teaching method, independent variables examined were race, age, and sex. The results showed a statistically significant difference between the mean GPA's of the two groups; the CAI group's GPA was higher (4.06 on a five-point scale) than the non-CAI group (3.59). Among the additional variables examined, only student age was found to be significantly related to performance. An examination of student attitudes toward the course and the professor found CAI students to be more positive than those taught through the use of traditional methods. (GFW)

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THE EFFECT OF COMPUTER ASSISTED INSTRUCTION AND THE ACADEMIC ACHIEVEMENT OF JUNIOR COLLEGE STUDENTS

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ABSTRACT

The purpose of this study was to compare the effects of traditional and computer assisted instruction on academic achievement in a Junior College psychology course. More specifically, when general aptitude and ability were controlled through using ACT scores as the covariate, there will be no significant differences in the achievement of general psychology students taught through the use of traditional methods and those taught through the use of computer assisted instruction.

A current and a historical role of the Junior College has been that of serving as the "open door" for higher education. This long standing challenge has been met by the willingness of those institutions to continue searching for effective ways to improve teaching and learning strategies in the classroom as they continued their effort to deal with their commitment to a very broad range of abilities and interests exhibited by their students.

The benefits of using the computer as a teaching method in other settings and at other levels has been described in the literature. Few of the studies have related to this setting. Are those benefits also available in an academic classroom at a Junior College?

The subjects were 145 Junior College students. Data were collected through the use of the total ACT score and academic records.

A significantly higher gradepoint average was achieved by the computer assisted group as compared with the traditional group. When race, age, and sex were treated as independent variables, age was found to be a significant factor at the .05 level. When student responses were tabulated regarding their attitudes toward the course and the professor, those taught through the use of the computer had more positive attitudes than those taught through the use of traditional methods.

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NATURE AND SCOPE OF THE STUDY

Introduction

Making adequate provisions for the individual needs and interests of students in a typical classroom has long been a basic concern of educators. This concern led to the use of various methods and procedures in the classroom. While improvements have been made, much still remains to be done in terms of satisfying the specific andvaried individual student needs. When the educational needs of students are not met, they do no perform at a level consistent with their academic potential. Computer assisted instruction was a method used to more adequately meet the needs and interests of students in a Junior college classroom.

Computer assisted instruction (CAI) as a teaching/learning strategy in the classroom has provided benefits for the students. The advantages of this method have been described in the literature. However, not many of these studies dealt with Junior college students or the use of this method in a psychology classroom. Are the positive results associated with this technique in other instructional settings available in a Junior College psychology class?

The Junior colleges have occupied a unique position in higher education as they have continued to operate a "open

door" institutions. This has been a long standing role for the Junior college and is one which will no doubt continue into the forseeable future. As the Junior colleges continue to fulfill their committment to the very broad range of abilities and interests exhibited by their clientele, so must their efforts to continue and to improve teaching/learning strategies in the classroom.

This study was developed primarily to determine the benefits of CAI in a Junior college psychology class. Is motivation and enthusiasm for learning increased for students in Junior college psychology classes who are involved in CAI? Do students who are involved in classrooms with CAI develop more positive self-concepts and attitudes toward the course and the professor? How do achievement levels in a psychology class compare for students involved with CAI and those using a traditional method?

Statement of the Problem

This study was designed to compare the effects of traditional and computer assisted instruction on academic achievement in a Junior college psychology course.

Hypothesis

When general aptitude and ability are controlled through using ACT scores as the covariate, there will be no significant difference in the achievement of general psychology students taught through the use of traditional methods and those taught through the use of computer assisted instruction.

METHODS AND PROCEDURES

Subjects of the Study

The setting for this study was a Junior College which was located in Northeast, Mississippi. The 145 students involved were enrolled in a general psychology course. Seventy-five were taught in a classroom through the use of CAI. Seventy of the students were taught through the use of traditional instructional methods.

Data Gathering Instruments

Data for this study were gathered through the use of one instrument and the academic records of students. Teacher Assigned Grades in Psychology, Age, Race, Sex, and the American College Testing scores were collected for all students involved.

Procedures

Students were enrolled in the computer assisted or traditional course in general psychology entirely by chance. In order to determine the effect of the two instructional methods on the academic achievement of the students, the Teacher Assigned Grades in Psychology were compared upon completion of the course. The total ACT score was used to statistically control the general aptitude and ability of the students.

The independent variables of age, race, and sex were also compared with the computer assisted and traditional instructional methods to determine their effect on Teacher Assigned Grades in the course.

Analysis of Data

The data were analyzed through the use of an analysis of covariance model. The .05 level of significance was used to evaluate the relevant ratios.

ANALYSIS OF DATA

This investigation was designed to determine the effect of traditional and computer assisted instruction on academic achievement in a Junior College Psychology course. The data were analyzed and interpreted in terms of this purpose.

Results of Analysis of Covariance

The null hypothesis stated that when general aptitude and ability are controlled through using ACT scores as a covariate, there will be no significant difference in the achievement of general psychology students taught through the use of computer assisted instruction.

The achievement of the two groups expressed in gradepoint average earned (5 point scale) were compared throu the use of an analysis of covariance model. The dependent variable was the gradepoint earned and the covariate was the total ACT score. Independent variables investigated besides teaching method were race, age, and ses.

A significant difference (.001 level) was discovered between means of the group taught by the use of computer assisted instruction ($x = 4.06$) and the group taught by traditional methods ($x = 3.59$). Therefore, it was concluded that the computer assisted group achieved significantly higher than the traditional group.

In addition, race, age, and sex were also compared with the two instructional methods to determine their effect on achievement in the course. Of the selected variables the relationship between age and achievement was found to be significant at the .05 level.

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to determine the effect of traditional and computer assisted teaching methods on academic achievement in a Junior College psychology course. The achievement of the two groups expressed in gradepoint average earned (5 point scale) were compared through the use of analysis of covariance model.

The dependent variable was the gradepoint earned and the covariate used was the total ACT score. Independent variables investigated beside teaching methods were race, age, and sex. A significant difference (.001 level) was discovered between means of the two groups. The group taught by the use of computer assisted instruction ($x=4.06$) had a higher mean than did the group taught by traditional method ($x=3.59$). Therefore, it was concluded that the computer assisted group achieved significantly higher than the traditional group.

In addition, race, age, and sex were compared with teaching methods in order to determine the effect of these variables on achievement. Of the three, age was found to be significant at the .05 level.

Conclusions

This study appeared to support the hypothesis that the use of the computer in a junior college classroom has positive effects on the academic achievement of students when compared to a classroom where traditional methods were used. Use of the computer in the academic instructional program seemed to be a worthwhile addition to the teaching methods used at the junior college level. The computer showed promise as a means of dealing with the junior college committment to a broad range of abilities, ages, and interests exhibited by their students.

It was also interesting to note an additional benefit associated with computer usage in the classroom. When students responses were tabulated regarding their attitudes toward the course and the psychology professor, those taught throught the use of the computer were more positive than those taught through the use of traditional methods.

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